COST AND MANAGEMENT

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Cost Control in the Rubber Industry

By Dan. A. Mackney

Manufacturing Organization . . .

By W. C. R. Jones

Executive Organization . . .

By Croft Brook

LOSS

Official Journal of

The Society of Industrial and Cost Accountants of Canada

March, 1956

MANAGEMENT NOTE

1956

As we entered 1956 most of our economists and business leaders in Canada forecast that the coming twelve to eighteen months would be the most flourishing in our immediate history.

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GLENVIEW 1428

Cost and Management

VOL. XXX MARCH No. 3

COST CONTROL IN THE RUBBER INDUSTRY
By Dan A. Hackney 86

A graduate of the Commerce School of the University of North Carolina, Mr. Hackney is a Certified Public Accountant and is presently Assistant Treasurer of Threads-Incorporated of Gastonia. He has spent several years in the public practice of accounting and had considerable experience in auditing, tax work, cost accounting and general accounting, specializing in installation and revision of cost accounting systems for manufacturing companies. He is past president of the Charlotte Chapter of the National Association of Cost Accountants, through which association's courtesy this article is published.

MANUFACTURING ORGANIZATION
By W. C. R. Jones 99

The author, a Registered Member of the Society of Industrial and Cost Accountants of British Columbia, is vice-president in charge of Industrial and Public Relations of the Powell River Company Limited, B.C. Holder of the M.I.E.C. degree, Mr. Jones has held executive positions with various paper companies since 1933 and has had extensive experience in the engineering and management phases of his field.

EXECUTIVE ORGANIZATION
By Croft Brook 107

The author is assistant to the President of Standard Oil Co. of British Columbia Ltd. He received his early education in Canada and the United States and joined his present company in 1935. After a five-year interruption when he joined the Royal Canadian Navy in 1940, Mr. Brook returned to Standard Oil in 1945 and was appointed to his present position two years later.

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Published Monthly by the
SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF CANADA
Incorporated 1920
Editorial and Business Offices: 31 Walnut Street South, Hamilton, Ontario
J. N. Allan, R.I.A., Secretary-Manager and Editor

Subscription price to non-members, $5.00 per year. Single copies, 50 cents.

Members desiring five copies or more of a single issue, may obtain them at 25 cents.
Opinions expressed by articles and comment are not necessarily endorsed by the Society of Industrial and Cost Accountants.

Authorized as second class mail, Post Office Department, Ottawa.

Editorial Comment . . .

WHO OWNS CANADA?

Canada has become the happy hunting ground for foreign investors, declared James Muir, president of the Royal Bank, recently.

It is true that a combination of rich natural resources, great capacity for growth, and liberal government policies has attracted a lot of U.S. capital. There is no hindrance to the remission of interest or dividends to non-residents and few, if any, risks of government intervention in business.

What are the facts?

Foreign investment in Canada totalled 11.4 billion at the end of 1953. This was about 15% of the country's total investment. The 8.8 billion American investment was tied up in petroleum, aluminum, iron ore, pulp and paper, automobile and chemical manufacturing. In 1954, this total American investment had risen to 9.5 billion or 700 million in one year..

In 1939, U.S. citizens owned 37% of the mining and smelting industry. In 1952, they held control of 53%. The U.S. owned 34% of pre-war manufacturing establishments. It now owns 38% of the total.

Of 4,253 companies operating in Canada that are branches or subsidiaries of American concerns only 2% have Canadians as members on their boards of directors. We must remember, however, that some 65,000 Canadian companies file income tax returns.

It may be interesting to note here that Canadian investments abroad totalled 4.5 billion at the end of 1953 with 1.1 billion directly invested in U.S. industry.

Probably what bothers Canadians most is the increasing share of industry, primary or secondary, owned by U.S. investors, and the fact that this ownership is based in the most dynamic section of our economy.

The large section of Canadian investment in Canada or 85% of total is in schools, homes, defence installations, public works, transportation systems and small industries.

The Americans by no means own Canada and certainly their capital, and the technical skills that accompany their capital, have benefited Canada tremendously. It is serious, however, that it is not possible for Canadians to invest in many large Canadian Corporations (U.S. owned), unless they buy stock in the parent company. It is also serious that many U.S. owned Canadian subsidiaries have few or no Canadians on their boards or any Canadian stockholders. This alienation of Canadian business men and assets will certainly not further the growth of Canadian executive talent. Canadians are unusually sensitive to U.S. influences and while often it is a bogey of no import, at this particular time, it is worth considering at least in an economic sense. Undoubtedly, the Gordon Commission will study the effect of U.S. investment in Canada and perhaps recommend action to further Canadian interest in companies doing business here.

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ACCOUNTING MACHINE

C. & M. Round-Up . . .

By N. R. Barfoot, R.I.A.

Executive Salaries

A recent survey of executive compensation in Canada and the United States made by the A.M.A. reveals some interesting facts.

Total compensation including salaries, bonuses and company contributions to retirement funds increased only 1.8% in the average last year.

For the same period hourly rates in manufacturing industries increased by 5% not including fringe benefits.

The payments to executives are more closely tied to economic trends than are those of any other segment of the population.

Formal salaries increased by 2.7% but bonus payments were down by 4.8%.

Only 38% of the executives surveyed were paid higher rates than the previous year. There was no change in 50% of the group and salary cuts in 12%.

About 68% of the surveyed companies have retirement plans and almost all executives participate. Premium contributions amount to 6% of total remuneration.

Building This Year

5 billion or more will be spent on construction in '56.

500,000 people will be employed.

1 billion or more will be expended on residential housing.

125,000 private houses will be built.

Canadians and Insurance

Here are the latest figures on insurance:

Policy holders now number about 6.5 million.

Total holdings are approximately 25.2 billions.

Protection is in excess of $6,400 per household — in 1945 this was approximately $3,200 per household.

Total benefits paid last year were 325 millions of which 130 millions were in death benefits and 195 millions in policy maturations.

Petroleum Demand

In the next 25 years —

Canadian petroleum needs will triple from 623,000 bbls. daily to 1,753,000 in 1980.

Canadian crude demands will rise from present 352,000 bbls. per day to 2.5 million per day.

Oil reserves of 23-30 billion bbls. will have been found of which 10-13 billion will have been produced by 1980.

Ability to produce or refining capacity should be 3-4 million bbls. per day by 1980.

20 billions will be needed by the oil industry to make this production become true.

It is estimated that oil will supply some 62% of the 1980 energy requirements as compared with 48% today.

How To Save Time

Here are a few tips from prominent executives on how they save time in their work effort:

The desk. Use the simplest type flat top with a minimum of drawers and appendages thereto and thereon. The idea is to reduce distracting time-wasting clutter.

Telephones. Some men use a lightweight head set leaving both hands free to go over mail and reports. In any case, control of phone calls by your secretary and yourself is most important.

Meetings. "Hold them standing up," says one man. Have them just before lunch or before five to shorten them. Any meetings likely to run over 15 minutes need a tightly controlled agenda.

Uninterrupted time. Make an analysis of the pattern of interruptions. Some members of your staff are bad at this. Allow specific times at certain times of the day for meetings and others for uninterrupted study times. Some executives report they are out, or go to an outside office or stay at home if the traffic gets so thick that they have no time to themselves.

Schedules. These are important. Write out one week schedules rating things that are urgent. Daily re-evaluate the schedule and table the priority tasks.

Best time. Everyone has some time of the day when they work at maximum efficiency. You work best when body temperatures are highest. Try to discover when these periods occur and do your weightiest work at that time.

Tape recorders get a high score as time savers.

Correspondence. This can be speeded by proper sorting of mail into major groups. If uncertain of all information needed to answer a letter, draft as much as possible. It will help to crystallize thoughts.

Reading. Many men take courses in speeding up reading time. It is most essential to read rapidly and accurately. The average reading rate is 250 words per minute, 700 per minute is not difficult to attain with some training.

PAYNE, PATTON & PUGSLEY
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Cost Control in the Rubber Industry . . .

By DAN A. HACKNEY,
Assistant Treasurer, Threads-Incorporated, Gastonia, N.C.

Item-by-item cost control is indispensable to this type of operation, the author maintains, in order to insure fair price structures and fair profits. He describes in detail the various controls exerted in his company, and the remedial steps to which these controls lead.

AS WE state it, the purpose of our business is to buy raw rubber and other chemicals, manufacture from these various raw materials the items which we wish to sell, and to sell and distribute the finished product through various channels. Some items are sold to subsidiaries, some to other manufacturers, while still others are sold through jobbers and dealers to the ultimate consumer.

Areas of Responsibility

In order to accomplish our purpose, we have divided the job up into five general areas of responsibility (see Exhibit I). These areas are known as purchasing, manufacturing, sales, advertising, and accounting. It is the responsibility of the purchasing department to buy all materials and supplies at the best possible price and to keep on hand an adequate stock of all materials and supplies to meet normal operating requirements. The manufacturing department is charged with the responsibility of manufacturing the various items which we sell and of keeping a minimum stock of finished goods of each item. It is charged with the responsibility of manufacturing each item at the lowest possible cost consistent with the quality standards as set up from time to time by the top management. Our sales department is charged with the responsibility of making as many sales as possible at prices set by the management and to conduct special sales campaigns as approved by the general management. Our advertising department is charged with the responsibility of printing thousands of pieces of literature and otherwise getting as good an advertising coverage as possible in co-operation with the sales department within a prescribed dollar budget. Our accounting department is charged with the responsibility of keeping historical records and statistics, of making periodic audits and tax returns, of preparing budgets and maintaining a control over expenditures, and of generally policing the entire operation of our company. For several years now, a major portion of the work performed in our accounting department has had to do with gauging the efficiency and performance of the other departments, primarily the manufacturing department.

What Is Cost Control?

What do we mean when we use the term cost control? All of us perhaps have our own definition but the definition which I would like to use in this article is as follows. Cost control is a system for the current measurement of costs and the correction of any factors causing costs to go awry. This includes the policing of costs to make sure that

RUBBER DIVISION

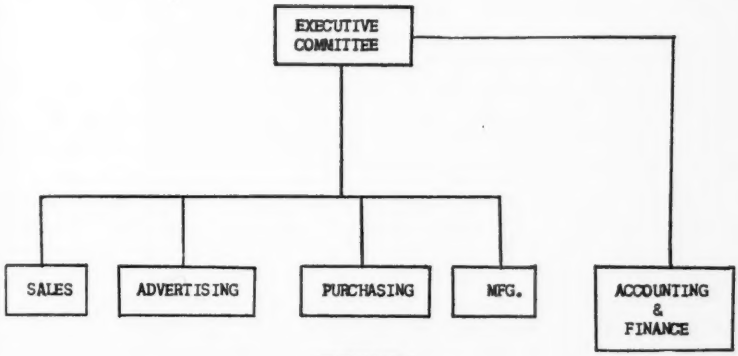

EXHIBIT I

costs and prices are maintained in the proper relationship so that a profit is realized. Cost control is distinguished from an historical record of cost by reason of the fact that comparisons are made to a standard or normal cost which should be achieved and are not measured against some other historical cost which itself may have been incorrect. Naturally, we compare the costs of one period with the costs of another period but unless we also compare them with a standard, we do not know whether the costs of either period are good or bad. The costs for any two periods may be the same but both may be particularly good or particularly bad. Statistics are nebulous at best as was the case of the two rookies who could not distinguish their horses apart. One got a bright idea so he clipped his horse's mane while the other rookie left his horse's mane long. This worked fine for a short while until the horse's mane grew out again at which time it was necessary to have another conference and they decided that one rookie would cut off his horse's tail. This also worked well for a while but pretty soon the tail grew back again. In desperation they were considering every possibility when one rookie got the bright idea that maybe one horse was taller than the other and in this way distinguishable. They measured the horses and sure enough the black horse was three inches taller than the white horse.

Setting the Standard

And what do we mean by standard cost? In our Company, we mean, a dollar allowance for each item of cost at each operation which the manufacturing or purchasing department is expected to meet. It is possible that they might do slightly better than standard in some instances. Please get the distinction here in our use of the word "standard". We do not mean by standard that our system is any way similar to any other system. We are using the word standard in the sense

of a guide or an expected performance. It is much like the negro porter on the train who when asked by a traveller what the average tip was replied "One dollar, suh." The traveller reached into his pocket pulled out a dollar and gave it to the porter. The porter's eyes got big and he beamed brightly, "Thank you, suh. You is the fust gentleman in an awful long time to come up to the average." And so it is with our standard cost. Our standard need not necessarily be anywhere close to an average of historical costs. Our standard cost is the goal which we expect the various departments to meet.

Please refer to Exhibit 2 which is our standard cost sheet. It will be noted that at the top of the first sheet spaces are provided for entering identifying data for the particular article involved together with various information on which costs will be based. Just below this we find the summary of the materials costs computation, on the left, raw materials, and on the right, packaging materials. Naturally, space is provided for entering the quantity of materials which will be used and also the price of these materials. The result, after adding waste allowances, is our material cost.

The lower portion of our cost sheet is devoted to a summary of manufacturing cost and of administrative and sales cost. Manufacturing costs are computed on the back of the sheet where spaces are provided for entering the various time allowances for each operation and from the time allowances the computation of labour and overhead cost. The total figures are then entered in the summary in the lower portion on the front of the cost sheet and the result is the standard manufacturing cost. In the right hand portion of this summary at the bottom of the front of our cost sheet we start with the manufacturing costs of the sales unit (whether the sales unit is dozens, thousands, gross, or some other unit) and adding the various sales and administrative costs on the same basis. As a result, we come up with the total direct cost of the item per sales unit and a few lines further down we come up with the total absorption cost per sales unit.

Our standard cost sheet is used for many purposes. On items whose selling price is not definitely established by competition, the cost sheet is used for setting the sales price. If the sales price is definitely by competition, the cost sheet is used to tell us whether we can profitably manufacture the item or in some cases it tells us that in order to profitably manufacture the item we must find cheaper methods of production. Many times our cost sheet tells us that we cannot manufacture or sell the item at all. Naturally our standard cost sheet is used for inventory valuation, for forecasting profits, for computation of estimated profit for interim periods between inventory dates, and for cost control. By using the same standards for all purposes, it is very simple to compute the effects of changes in labour costs, material costs, or any other costs without necessarily revising our cost sheet, every time a cost changes.

(Continued on page 91)

-RUBBER DIVISION

COST SHEET I.B.M. Code # _____

Date_____ _____ Article_____

Formula Sales Unit Selling Price

Unit Weight Heat Weight Duro

Mold Cost Cavities Per Mold Cure Time

Packing Shipping weight per unit lbs.

Base Materials Cost				Packaging Materials	Quant	Cost	Amount
Formula Cost Per Batch				Boxes			
Pounds Per Batch				Cans			
Cost Per Pounds				Labels			
Pound Per Cost Unit (1000)				Tissue			
Base Material Cost				Inserts			
at %				Display Boards			

Other Direct Materials	Quant	Cost	Amount				
				Shipping Carton			
Total				Total			
Waste %				Waste %			
Cost				Cost			

Summary of Manufacturing Cost

Department	Mat.	Direct Labor	Var. Overhead	Total	% Firsts	Adjusted Cost		Sales Unit		
Milling								Mfg. Cost Sales Unit		
Vulcanizing										
Grinding and Lathe Cut								Commissions %		
Molding								Discount %		
Buffing								%		
Finishing								Sub Jobber Discount %		
Other Direct Mat								Freight Out per lb.		
Sub Total										
								Total Direct Cost		
Packing								Fixed Cost:		
								Manufacturing		
Mfg Cost Per 1000 Unit								Administrative %		
								Selling %		
Per Sales Unit								Total Cost		

EXHIBIT II

DEPARTMENTAL LABOR AND OVERHEAD

Operation	Direct Time	Mfg Unit	Cost Unit	Time Cost U	Labor Rate	Labor Cost	Mach T Cost U	Overhead Rate	Overhead Cost
Compounding									
Milling									
Extruding									
Cutting									
Vulcanizing									
Grinding									
Lathe Cut									
Buffing									
Molding									
Cutting In Strips									
Punch I.D.									
Punch O.D.									
Ferriat									
Washing									
Painting									
Machine Trim									
Hand Trim									
Water Waxing									
Inspecting									
Packaging									
Pack & Inspect									

EXHIBIT II (reverse side)

(Continued from page 88)

Special Considerations

Three things about our rubber division are somewhat unusual. First, the machinery and equipment which we use is extremely heavy and expensive. In order to operate the equipment, we must have a lot of power available and a lot of pressure must be used. If workmen are careless, a man could easily be maimed or killed, an expensive machine could be quickly destroyed, or many other things might result. In order to keep the plant working efficiently, therefore, it is necessary that we hire highly skilled operators at high rates of pay and give them considerable amounts of training. This means that lost time on the part of our labour force is very expensive.

Secondly, because of the fact that the equipment is very expensive and very valuable, depreciation, property taxes, insurance costs and other fixed overhead expenses are very high. This means that it is very expensive for the equipment to be idle.

A third factor which must be considered is the fact that for many years now the raw materials used are very expensive. Prices fluctuate widely over short periods of time and even at the low point of the fluctuation, the materials are expensive. This means that waste must be controlled very closely.

Necessity for Cost Control

So this is the background of our cost control system. Our business is to manufacture various rubber items and then to sell them through various channels and in various ways. We must keep costs within bounds, make sure that our entire operation operates at a profit item by item, and we must know the various cost factors by operation so that a fair price structure can be maintained for various channels of distribution. We cannot operate for several months and then prepare profit and loss statements to see how we have done. We must know currently how we are doing in order that losses may be eliminated and profit may be improved.

Labour Cost Control

Let us look first at the controls covering our labour cost. Every week we write cheques to our labour force paying them for a week's work. In order for us to stay in business we must make sure that we received value in exchange for the labour dollars which we paid out. It is not enough to merely say that we are paying for a week's labour. We cannot sell a week's labour, but on the other hand we can sell merchandise. We must, therefore, see that we did get a week's quality production in exchange for the week's wage which we pay each worker.

The first item in labour cost control is a daily efficiency report (Exhibit III) based upon working hours. As each job goes into the production department a standard number of hours is allowed for each

operation which will be performed. As the job progresses through the factory, each employee is advised when he gets the job how much time should be required to complete the job. The worker then keeps his own record of the production showing the length of time required for each heat. At the end of the shift, the foreman measures, or counts the production and reports to the cost department the production for each worker. The cost department then prepares a daily efficiency report showing each worker on each shift and showing his total production. Alongside the total production is shown the standard number of hours, the actual number of hours, and the loss or gain. This report is given to the plant superintendent before 10 o'clock on the following morning. The superintendent then follows any inefficiencies brought out by the report and usually interviews each worker showing a substantial inefficiency. Many times it is brought to light that the worker has not received sufficient instruction, that machines are not working properly, or that a worker is not suited to the job which was given him. It is up to the plant superintendent to determine the reason for the inefficiency and to eliminate it immediately. As time goes on, however, the result of the daily efficiency report is that more and more workers are getting better than standard production. Knowing that his production will come to the attention of the plant superintendent no later than tomorrow morning, each worker is extremely proud of his performance record and is very anxious that it be good. He is therefore very quick to point out machine troubles, stock troubles, or other troubles which he cannot correct himself and is extremely anxious to learn any new technique of operation which will improve his performance. It is an old story that workers who feel that their boss will come around and pat them on the back tomorrow morning if they do a good job today will strive constantly to do a good job so that they will be recognized.

The second item in our labour cost control is the weekly labour cost report (Exhibit IV). This is, of course, a standard labour cost report showing quantities of the various items produced, their standard cost compared to actual cost and the difference between the two. This is a summary report for the week in dollars of the various daily efficiency reports which were based on hours. This report goes to the top management and many times the explanation for the good or bad performance shown in dollars in the weekly labour cost report is merely a summary of the answers which the superintendent got when he looked into daily inefficiencies. In addition to bringing out in dollars the results of workers' efficiencies or inefficiencies, this report often discloses that actual cost of manufacture is higher than was estimated prior to the time manufacturing started and we sometimes find that it is necessary to stop the manufacturing of certain items and either find more efficient methods or discontinue the item completely. Since this report is prepared on a weekly basis, whenever this situation does develop, production can be stopped before a great deal of harm is done. One of the most valuable

DAILY EFFICIENCY REPORT

Worker	Item	Produced	Time Allowed	Actual Time	Time Lost (Gained)
P. D. Jones	W604	1,000	1 hr., 30 min.	1 hr., 20 min.	(10 min.)
	B954	10,000	2 hrs.	2 hrs., 20 min.	20 min.
	C371	2,000	4 hrs.	4 hrs., 30 min.	30 min.
C. L. Smith	G735	10,000	8 hrs.	7 hrs., 30 min.	(30 min.)
R. H. Self	H421	1,000	6 hrs.	6 hrs., 30 min.	30 min.

EXHIBIT III

WEEKLY COST REPORT

Item	Quantity Produced	Std. Labour Cost Unit	Std. Labour Cost Total	Std. Overhead Cost Unit	Std. Overhead Cost Total	Std. Mat'l. Cost Unit	Std. Mat'l. Cost Total
B 954	10,000	$ 1.00/M	$ 10.00	$ 1.00/M	$ 10.00	$ 2.00/M	$ 20.00
B 973	100,000	2.00/M	200.00	1.00/M	100.00	2.50/M	250.00
B 1002	600	100.00/M	60.00	50.00/M	30.00	100.00/M	60.00
C 371	1,000,000	1.00/M	1,000.00	1.00/M	1,000.00	1.00/M	1,000.00
C 402	1,000	1.00/M	1.00	1.00/M	1.00	1.00/M	1.00
			$15,000.00		$10,000.00		$25,000.00
Actual cost per ledger			16,500.00		8,000.00		28,000.00
Actual over (under) standard			$ 1,500.00		($ 2,000.00)		$3,000.00

NOTE: If these were actual figures, prompt action would be necessary to correct labour and material variances.

EXHIBIT IV

parts of this report is the fact that it is prepared on a departmental basis. If costs are too high, the finishing department cannot say that it is the fault of the moulding department or that it is the fault of the millroom. Each department is compared to its own standard cost and there is no question as to where the excessive cost lies.

The third item in our labour cost control is a monthly labour cost report in dollars which is a summary of the weekly labour cost reports. This report is distributed to the same people as is the weekly labour cost report. The main reason for our having the monthly labour cost report is that we feel that a week is too short a period of time on which to base budget revision or alteration. Taking the figures for a month, we discuss the various efficiencies and inefficiencies reflected and determine whether budget revisions are necessary.

Material Cost Control

Next in importance to labour cost is material cost. Naturally, raw rubber constitutes the major portion of the material cost but in addition to raw rubber we use synthetic rubber and a number of different chemicals. Raw materials are first mixed by a man known as a compounder and put up in batches, each batch being designed for a particular product. After the compounding process, the batches go to the millroom where they are thoroughly ground up and mixed on a rubber mill which mixes the materials by grinding them between two powerful rollers. After this, the rubber compound goes to the press room where it is moulded into the finished product. In the compounding operation, the most likely excessive cost will come through waste of materials. In the milling operation, there is also a possible loss from wastage but more probably the excess cost will arise through scorched batches (if the mill is allowed to get too hot, the batch will be scorched by heat) and in the moulding operation the most likely excessive cost will be from seconds or imperfect work. At this stage, also, waste can be an expensive factor if not properly controlled.

Our cost control in the compounding room is designed to locate wastage in materials and is therefore a report showing quantities of materials used as compared to standard quantities for the batches actually compounded. This is a daily report and is stated in pounds, not dollars. If waste is disclosed, the wasted material is extended at the cost price to show the actual dollar cost of the waste.

Our cost control at the milling operation is designed to point out both waste and scorched batches. A perpetual inventory of batches mixed is maintained and each day, the number of batches reported as being mixed together with the inventory of batches on hand at the end of the day must balance with the number of batches on hand at the beginning of the day and the number of batches compounded during the day. No allowance for loss is made in the millroom since no loss will occur if the millman is watching his machine properly. In the past,

however, our cost control at this point in the operation has disclosed several things. The first major item disclosed was a defective cooling system which allowed the mill to heat up quickly. At times when millmen get careless, a loss of materials will show up on this report due to carelessness in putting the materials into the mill or failure to completely empty the bags in which the materials were compounded.

The most important point of the material cost control system is at the press where the finished item is moulded. If too much material is placed in the mould, it will squeeze out of the mould during the moulding operation and cannot be reused. If the material is placed in the mould incorrectly, excessive seconds will result. If the material is heated for too long or too short a period or if the pressure on the mould is not correct, the item will not be properly "cured" and again imperfect work will be the result, often times being a complete loss, so far as resale value is concerned. A daily record is kept showing the actual and standard number of pieces moulded from each batch and a weekly standard cost report is prepared showing number of pieces produced, standard vs. actual material cost, and dollar variances. Whenever variances of any consequence arise, they are quickly analyzed and corrective action is taken so that loss will be cut to a minimum. Control over seconds and imperfect work will be covered later in this article.

Overhead Expense Control

Our control over overhead expenses is largely a matter of comparing actual expense against budgeted expense. Approximately 80% of our overhead is "Fixed" overhead because of the high cost of machinery used. Depreciation, insurance, property taxes, etc., form a major part of the factory overhead. For purposes of information, we have a weekly report showing standard overhead cost for actual production as compared to actual overhead production. The purpose of this report is to show the effect of actual volume on overhead costs.

Control Over Seconds

The control over seconds is an important part of our cost control procedures. For every item which we manufacture, there is a predetermined allowance for seconds. This allowance is made on our cost sheet. Each day from the record of work done by the inspectors, an inspection report is prepared showing the clock number of the person who moulded each item, the inspector's number, quantity of each item inspected, total first quality and total seconds or imperfects. This report is sent daily to the superintendent early in the morning covering the previous day's work, so that any excessive seconds pointed out by the report may be taken up by the superintendent immediately. If the actual percentage of seconds continues to be more than the allowance made in computing costs, the particular items are taken up in conference and a course of action is decided upon. The first day that the excessive seconds showed up on the report, the superintendent should have taken

corrective action if corrective action were possible. If corrective action were not possible, the item should have been brought up by him at that time and either a new cost sheet will be made out, equipment should be repaired, or other action should be taken. Continued excessive seconds on any item, is an indication that something is decidedly wrong.

From the daily reports, weekly summary reports showing weekly percentages of defective work and the actual cost of imperfects over the allowance made therefore is prepared. This report goes to all phases of management along with explanations showing what corrective action has been taken for the variances shown.

Freight Control

Although not a part of factory cost, freight out on sales is an important part of our costs. For purposes of information we analyze freight bills by geographic territory and compare the totals so obtained with the freight allowance made on our cost sheet.

Periodically a report is prepared showing profit by geographical territory. In order to prepare this report, each territory is charged directly with its product cost, commission cost, and freight cost. Cash discount is charged to each territory based upon a percentage of sales in that territory. This report points out the contribution to profit of each geographic territory and throws the spotlight on those territories actually producing a profit and those territories that are producing little or no profit.

Advantages of Cost Control

And what, one might ask, is the result of all this? The detail work required by all these procedures takes up the time of from 1 to 1½ clerks and the continuous follow-up, cost estimating, etc., takes up the full time of one skilled cost accountant. In return for the labour cost so expended, what benefits does the company derive? The answer is immediately obvious. Any one of a dozen major items disclosed by the cost control procedure during a year will pay the entire cost of the whole department for a year. Excessive cost on just one item, if not discovered promptly, could amount to a substantial amount of money within a six months' period.

The first major result of the cost control procedures is a control of costs at their source. Labour inefficiency can be called to the attention of the employee involved and also the department heads immediately and corrective measures may be taken. If the cost variance is sufficient to impair the profit margin on an item, production can be stopped and the item can be redesigned, discontinued, or other action taken before the loss is too great. Oftentimes if the material cost is too high, the formula may be changed and sometimes the item is completely reformulated. Often times we find that equipment which should be working perfectly is for some reason not working properly, causing

substantial losses to be sustained. Naturally, the machinery must be stopped and the maintenance crew must be put to work to locate and repair the trouble before production can proceed. No hard and fast rules can be made in advance however as to what action will be taken if such and such occurs. It is a matter of getting the facts and making a decision on those facts together with a considerable amount of reason and often an endless amount of tact. Cost control procedures will not correct the troubles but will point out that trouble is present. It is then the job of the people in charge of the departments concerned to eliminate the problem and again get the costs in line.

A second result of the cost control procedures is a series of monthly summary reports which keeps all management informed as to performance of each department and of the company as a whole. The manufacturing department has its labour, materials, overhead, and imperfects variances to contend with and to explain. As explained above, the overhead variance with which the manufacturing department is concerned is only a spending variance, since 80% of the overhead is "fixed". The other variances, however, must be explained since a loss variance points out that money has been lost which should not have been lost. The sales department must be judged by profit produced on a direct cost basis. In this connection, the product mix is very important since all items are not equally profitable. Gross profit by territory is an important point for several reasons. Often times it shows the difference between a good or bad salesman; many times it is the basis for a decision as to wether the territory is too large or too small geographically, and many times the effect of wide spread lay-offs in a certain section is disclosed. Often times, too, good or bad use of advertising in sales promotions is disclosed.

Remedial Action

Naturally, the actions most often taken as a result of being off course are as follows:

1. An employee receives further training or is transferred to a job that he can do better.
2. The employee is fired for continued loafing on the job for which no excuse can be given (this is a very rare occurrence indeed and is a reflection on the supervisor as well as the employee concerned).
3. The employee is given an explanation that the work standards are fair and that he is expected to meet them. If he knows of any reason why they are not fair or any reason why they should be adjusted, he is urged to give these reasons to his immediate supervisor. Sometimes this will result in re-appraisal of the standard.
4. Unprofitable items are discontinued immediately.
5. Marginal items are re-designed or re-formulated.

6. The cost standard is changed to incorporate some element of which the cost department was unaware when the standard was set.
7. The price of an item is raised to cover costs which were not foreseen when the original price was set.
8. The price of an item is reduced in order to gain greater volume on an item which turns out to be more profitable than was at first anticipated.

Conclusion

In conclusion we feel that the function of management includes the evaluation of results of the various departments and the job of keeping the operating team up to par. The best way to stay competitive is to work ceaselessly to render a better service or to produce a better product at a lower cost. To do the job properly, we must have the facts. We must know currently what is going on, and performance must be evaluated promptly so that necessary action can be taken before too much loss has accumulated. Our employees do not work free and we see no reason why our company should do so. It is our feeling that cost control pays good dividends. If your business operates without the benefits of cost control, may we suggest that you try them today?

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Manufacturing Organization . . .*

By W. C. R. JONES, R.I.A.,
Powell River Co. Ltd.,
Vancouver, B.C.

In this article the author describes the organization of an ideal manufacturing enterprise from the inception of the idea, through plant construction and hiring of personnel, to the final flow of the finished product.

IT IS necessary to go back to fundamentals to paint my picture of organization for production. In selecting material with which to paint this mental picture I have tried to get a simple medium and have selected the ordinary 50c piece and the well known game of "heads or tails". I would ask you to look upon my mind as *Management*, my thumb as my *Machinery*, the coin as my *Material* and the correctness of the guess of "heads or tails" as my indication of *productive success.*

In the terms of the statistician, the probability of heads or tails coming up is only .5 when I flip the coin onto the floor without any regard of the side up on the thumb, the strength of the flip and having no control of how it hits the floor. Let us call this plant (A). The production efficiency is very poor indeed!

If I place my coin carefully on the thumb and attempt to flip it at the same speed and catch it the same way and then lay it on a table or the back of the hand the same way then the probability of success moves up to about .8. In other words by standardizing the procedure and by the elimination of uncontrollables the "head" or "tail" result can be achieved 70% of the time. (*This statement I am prepared to support with cash.*) Let us call this plant (B).

If now we duplicate the flipping mechanism of the thumb with an accurately made spring and triggering device and have the coin caught by a cam-operated clamp then the probability of success moves up close to 1.0 and is affected only by carelessness, air currents and need of adjustment and maintenance. This is plant (C).

From this simple and perhaps facetious example I drew many conclusions.

In these three examples the management (brains) did not vary in number or quality, but the chance of success of the operation went from sheer luck to practical certainty.

The physical requirements varied too. In case (A) where the results were the worst the operator must stoop and retrieve the coin. While doing this his brain (management) was doing nothing constructive towards the end results. In case (B), the physical exertion was less as the coin was caught and placed on the hand or table. The productive results in quality and quantity are better. In case (C) the coin is taken from the receiving clamp and again placed in the flipping mechanism or perhaps is automatically slid to the original position —

*An address delivered at the Third Annual Provincial Conference of the Society of Industrial and Cost Accountants of British Columbia on February 11, 1956.

the required operator's exertion being that of control and correcting mistakes. Therefore, where successful production is almost 100% the physical effort is almost zero and the productivity many times that of the manual and haphazard flip.

The Product

Let us translate this to industry. One could say that the "Organization of Manufacture" must have the following objective. "The production of as much as possible with the slightest effort," or synonymously "the production of goods or services desired by the public at the lowest possible cost."

I cannot visualize the law of the land letting us set up a factory that will depend upon the correct flipping of a 50c piece, although it seems to satisfy a basic service to many people. Nevertheless, before any intelligent discussion can develop on the manufacturing organization one must assume a product. I will select wood pulp as my example.

Certainly the first step in "Manufacturing Organization" is for the group or the person who conceived the idea of supplying a public need to crystallize exactly what they want to do. They should set down precisely what is to be produced. In wood pulp there are at least 20 types and sub-types which are considered a standard trade commodity and one cannot successfully make one in a plant specifically designed for the other any more than I can flip flapjacks on my thumb just because I have shown myself capable of flipping a 50c piece.

With the product decided we must assume the adequacy of raw material. If I seem to pass over this subject quickly it is because the Powell River Company, of which I am an officer, has made its stand on adequacy in this field quite plain in its Sloan Commission Brief.

Laying the Cost Groundwork

The next stage in manufacturing organization is the most vital in the whole history of the undertaking and the point at which our R.I.A. should make his appearance.

With the product decided and the material assured, the promoters' dream must be subjected to detailed analyses and forecasts by an accountant. The accountant must be one accustomed to the disappointments, inefficiencies and high costs associated with start-ups. At this stage the accountant, unless he has had exceptional experience, cannot work alone. He cannot start to make forecasts until the "expert" in the particular process or product has decided the exact type of equipment to be used which in turn dictates the capital investment to be made. Yes, this is the important stage — here is where the probability of success is fixed! Will the plant have a "chance of the coin" success or will skilled engineering and layout make the success probability .999 and the output higher than that of any previous plant on the same product whether it be judged on the basis of capital invested or of labour employed.

Most industries and certainly the pulp and paper industry have technical associations that give free access to new developments and these are rapidly described in trade journals and at the industry conventions. Published data and visits to the most modern plants are essential tools at this time.

Modern engineering has moved from manual to automatic operation. This means so much in quality, man power and productivity — sometimes without great capital investment increase — that no one can afford today to install a plant without first assuring that the design will be the best. The plant selection must be resolved by process analysis, cost analysis and cash position forecast.

Engaging the Key Men

By personal experience I know that the promoters must see that the first staff people engaged are the production manager, the engineer and the accountant, to be vested immediately not only with investigating the process and plant but also with all plans for the eventual operation of the completed plant. They will have every reason to see that the machinery is well installed and that the construction costs are kept at a minimum. There are some outstanding examples where this has been done. One plant in Alaska was designed by experienced men who knew they were subsequently to manage it. The efficient operation and the low maintenance cost because of correct selection of construction materials has, as nearly as I can estimate, offset completely the cost differentials due to being located in such an isolated area.

Well, at this point at least on paper we have our product, machinery and raw material selected. The cost analysis and cash forecast has been made and our senior operating staff is watching over the costs of construction seeing that this expense will not be forever a burden in comparison with competition.

When the manufacturing heads are not present during all of the construction, they are hired and arrive at a time when the plant is semi-complete — or even worse when complete — and where physical production is possible but nothing is set up to put orderly operations underway. The stage has several other noteworthy symptoms. Construction stores are spread throughout the plant either completely or partially uninventoried. Spare parts that arrive with machinery are scattered and can be identified only with the greatest difficulty. There remains the messy operations of painting and insulation of tanks and pipes.

The efficiency of design, the responsibility for design, the careful control of cost and the desire of orderly storing and identifying of important material all dictate the hiring of the top operating staff immediately after the company promotion stage and before engineering and construction start.

The accountant will be more than busy during the construction period. Outside of doing the full time job of watching the cost, he can assist his manager in accumulating data from the industry on:—

(a) Anticipated raw material and labour costs and requirements.
(b) Information on local wage agreements and industry wage settlements.
(c) Method of reporting used in similar plant for the control of inventories, distribution of material use and labour costs.

Preparing for Production

The time allowed for formation of the staff proper will depend entirely on the type and location of the plant, the degree of training needed and the availability of skilled men. In the pulp and paper industry, I feel that the salaried staff who are to cover the functions should be employed at least 6 months in advance of start-up to prepare "Standard Operating Procedures", to train their subordinates and to see that a union gets certification for the employees well in advance of the worry of start-up.

The accountant must allow for this "training-period" cost on his cash forecast and should start to report to the management the actual against budgeted cost as soon as this programme starts. From this procedure and from his original process cost estimates the routine production cost report will start to flow.

Similarly from the accountant's original studies and manning tables, the Personnel Department will start to engage men and the Purchasing Department will contract for raw material supply — which if we are talking about pulp in B.C. means wood from logging divisions or the open market, sulphur from Texas, salt cake from Saskatchewan, chlorine from Tacoma, Washington, Sodium Chlorate from Quebec and about 20,000 different items of nuts, bolts and supplies usually kept in the pulp mill stores.

Prerequisites of Personnel Procedure

The hiring of the operating employees, their training and the conditions of work do not vary greatly from industry to industry today but there is a certain necessary minimum requirement in routine and paper work to assure efficiency in operations, in employee satisfaction and in union co-operation. These may be summarized as follows:—

Interviewing

No one should be considered for employment until he has had sufficient discussion with a Personnel man to reveal his motivation — why he wants to work at the plant — why he wants to work in the industry.

Job Requirements

No one should be hired until he knows, has discussed and has agreed to carry out the full duties of the job. This includes all com-

pany rules on safety and full understanding of any union agreement existing. He should have a pre-employment medical to assure that he can fill the job with safety.

Hiring

The hiring should be given some significance beyond the mere signing of papers. Some high officer of the company — preferably the manager — should make the man welcome and reiterate the safety, union and company rules.

Induction

The foreman must receive the new man and spend enough time to see that he understands department routine and from whom he will get training. The foreman must see that training before work is started is adequate to protect the product and plant and see that the man realizes all points of danger.

Merit Rating

There must be a routine follow-up on the man's merit. Quite apart from the psychological effect on the employee, this record is an absolute necessity today for good union co-operation on instances of discipline or on promotions.

Exit or Separation Interviews

With the exception of the occasional advice to "drop dead", exit interviews provide the most uninhibited source of information on the success of whole Personnel and Supervision functions.

Training and Development

The development of supervisors from the ranks by training them in human relations, conference leadership, safety, and cost control is now a standard part of industry. Management development by which the training needs of supervisory officers are revealed and provided, is now universal whether it be a formal plan or merely one of seeing that all jobs are now skillfully covered by the incumbent with replacements always in training.

Modern industry is a "non-physical" industry. It is now "push button" and is moving beyond that to the automatic. This means that the employee and staff member must have training far beyond the needs of the "manual" age. He must know his equipment and his process in great detail.

Standard operation procedures must explain the method of achieving the results required. The aim point, be it any one of the thousands of theoretical and physical characteristics capable of test, must be stated as well as the tolerances that are permitted before higher supervision is alerted and remedial action taken. Communication must flow to the employee continuously. He must know the changes in specifications, in testing procedure or in equipment and he should know why these changes are made.

Reports

In the mill I carry in my mind for this talk, reports of all kinds flow to the statistical group to emerge as production, quality or cost schedules. The need and adequacy of these must be continually judged. Do they fulfill the job of giving what is required with the minimum of effort? Certainly a man with R.I.A. or similar training should be in charge of this clearing house of information. Often much can be eliminated. With modern punched cards, magnetic tapes and memory drums, written reports may soon be things of the past.

Organization

We have now created, mentally — an organization for production. We still have to manage it and for this no more definite guide can be set than the definition with which we started. The aim of the organization is "the production of goods or services desired by the public at the lowest possible cost." To accomplish this the Management or supervisory organization cannot be set down in a well drawn chart. No organization is static. We train and develop supervision continually, thereby making sure that it is not static. Death and "green pastures" also make sure it is not static. Therefore an organization chart is only a statement of what was, yesterday. Tomorrow it will be different but the objectives of the industry or plant remain the same. Therefore realigning the organization to fit is a constant job — and, if company objectives change, then complete realignment is necessary.

Bad organization is readily recognized in lack of knowledge of operating procedures and of company objectives. Invariably this is the result of poor management and supervisory skill and has the same outcome of low employee morale.

Good organization starts with acceptance of the statement that theoretical concepts are mile posts only. The staff must work together, act team-wise, and accomplish the production job. There are important ways of welding together this team. There is no substitute for the brief daily gathering of all line superintendents and foremen with the manager to discuss last day's failures and successes and to go over the programme for the next 24 hours. Across the table, differences and irritations are thrashed out and all get a clear understanding of the overall aim than can possibly be shown on written order sheets.

The second most important factor is the integrity and leadership qualities of the manager. His position may afford him prerogatives — and privileges, but if he is a good manager he will assume none that he cannot readily and uniformly give to his staff. His standing in the community and in his private life will be recognized by all. Employees who disagree with policies will follow them if fairly applied. They expect a manager to be constant in his approach to all things. In spite of the gap which now exists between management and labour because of the increasing size of plants and the union "shop steward" approach,

the men still want and have every right to expect in management a man who knows their problems, who has been "through the mill" and can earn their general respect.

I have no doubt that many would have preferred me to talk of a theory or technique of organization rather than my philosophy of organization.

I could mention the line and staff functions necessary. In a pulp mill there are lots of interacting and interlocking positions.

There is a reasonable mathematical approach to the number of people who should report to anyone. The military organization has set this down. If the number of people reporting to a corporal, sergeant, lieutenant and up are computed you get a relationship that is interested and quite in keeping with the generally accepted importance of these people. Transmitted to industry and going through the ranks you also get figures which agree with the military organization until you get to Presidents and Chairmen of Boards. There you find contacts from above as well as below — customers, shareholders and directors in a number which when calculated explains the difficulty, the ulcer-producing potential and the salary requirements of these positions.

But the military organization deals with an average recruit, an average non-commissioned officer and an average officer. It also presupposes average intelligence and ample replacements.

In Industry we have the power to train, the power to select, and, returning to my original example, we may have a Class "C" plant that uses brains and little effort or we may have a Class "A" plant that has much effort and little brain. We also have the man who is twice as good or works twice as hard or the reverse. How then in industry can a constant formula be applied? It must meet the condition of doing the job in the most efficient manner with the personnel at hand or readily available. The human factor is variable and is the tide in industry which carries men and companies to their proper level of success.

The only test of an organization is "Does it work."

The Accountant's Place

Quite apart from the routine accounting work, where does the cost accountant fit into the organization?

He, like anyone else, will fit where he shows himself able to fit. If he wants to be merely the progenitor of figures and reports that is all he will be. If he takes active interest in the plant, and helps in the estimating and costing of new machinery and the anticipated results of change in organization or equipment then he will have these functions to do. In my opinion, the R.I.A. has training that can bridge the conventional engineering, production and accounting functions with management.

I recommend that he set out to get operating knowledge to augment his cost knowledge. He will then be on the way to management success.

Summary

To sum up. What do we need to manage production? We need a clear statement of the company objective. We need a clear statement of company policies and operating procedures.

We need an organization set up which is recognized merely as a guide, and not necessarily a logical arrangement. We need a thorough line of communication to all employees. We need a scheme which trains for safety, and for promotional opportunity at both production and management levels. Every job should have a trained replacement ready.

We need adequate yardsticks to measure production in quality, volume and cost.

We need the most modern equipment economically designed with the minimum efficient plant.

With this all accomplished pulp and other products flow from the mills at a profit with a lifetime of good pay and promotion opportunity ahead.

FOR FURTHER READING

MEN, MARKETS, MACHINES AND MONEY, by H. B. Smith, A.M.A. General Management Series No. 173.

PLANNING A MANUFACTURING ENTERPRISE, A.M.A. Manufacturing Series No. 211.

FACTORY ORGANIZATION AND MANAGEMENT, by F. C. Lawrence, The Cost Accountant, Oct. 1951.

INDUSTRIAL ORGANIZATION AND MANAGEMENT, by Bethel, Smith, Atwater & Stackman, McGraw-Hill Book Company, Inc.

PERSONALS

Harold Lumsden, B.Com., former chairman of the Vancouver Chapter, has been appointed Credit and Office Manager of A. J. Forsyth & Co. Ltd. Mr. Lumsden was formerly with Vancouver Engineering Works Ltd.

Charles Warnes, R.I.A., of the Toronto Chapter has retired from the Canadian Kodak Co. Ltd.

Thomas Penman, R.I.A., also of the Toronto Chapter, has been chosen to succeed Mr. Warnes.

W. W. Burnett, former member and director of the Niagara Chapter, has been transferred to the New York office of Nabisco Foods Ltd.

Ralph Martel, of the Hamilton Chapter has been appointed Office Manager of Chipman Chemicals Ltd. He was formerly with Canadian Industries (1954) Ltd.

L. W. Bessell, a member of the Calgary Chapter, has been appointed Secretary-Treasurer of the Calgary Public School Board.

Executive Organization . . .*

By CROFT BROOK,
Assistant to the President,
Standard Oil Company of British Columbia Ltd.

In the following article the author outlines some of the principles of operating an effective executive organization touching particularly on line and staff relationships, the use of assistants and some of the management tools.

Line and Staff Relationships

EVERY company is organized for a specific purpose. This may be to make, invent, or sell a product or service, or any combination of these. Whether it be organized for production, sales, research, or finance, the line component is the one that has the direct responsibility for accomplishing the objectives of the enterprise. Organizationally speaking, then, the line is the chain of command that extends from the Board of Directors, through the various delegations and re-delegations of authority and responsibility, to the point where the primary activities of the company are performed. The line, then, refers to those Departments that have the power to initiate and carry through to conclusion the basic activities of any company.

Since the line is directly responsible for accomplishing the objectives of the company, it naturally follows that line elements can be identified most accurately in terms of these objectives.

To the extent that objectives of companies differ, line activities also differ. For example, an oil company may be organized to develop sources of crude, to manufacture petroleum products and by-products, and to market these products. The line departments then are production, manufacturing and marketing.

If a steel company has as its primary objectives the manufacture of quality steel products and their sale at a profit, the line functions in this instance are production and sales.

In a department store chain, however, success depends as much upon buying as selling. Both the buying or purchasing and sales functions are line responsibilities.

Some functions you will see, then, are line in one company and staff in another. There is, in fact, little uniformity as to what is line and what is staff from one company to another. For instance, one large Eastern company is organized primarily to manufacture and sell machinery. Engineering the product and providing service to franchised dealers are important, but only as a means of selling more effectively. Consequently, in this case manufacturing and sales are line. Engineering operates in a staff capacity to the line and performs a service function supplying parts, training and assistance to the dealers who service the machines. It is possibly of interest to note here that in the dealer's organization, however, sales and service are the line functions.

*An address delivered at the Third Annual Provincial Conference of the Society of Industrial and Cost Accountants of British Columbia on February 11, 1956.

These same functions receive different emphasis in an aircraft manufacturing company. Here the enterprise can only succeed if it continually invests a good share of its efforts in the complex problems of design and engineering of new aircraft and the testing, servicing and modification of the aircraft it sells. In this organization, then, the line departments are engineering, manufacturing, sales and service.

The finance function is considered staff in many companies; in others line. In one company I know, for example, the finance department operates as a specialized staff department, with responsibilities for financing, accounting and reporting or budgeting and control of expenditures. The performance of these duties is a staff service to the other units of the company and does not involve the exercise of authority by the finance department over line departments. Necessary uniformity as to accounting, budgeting and reporting procedures is secured through company policy and procedures which are issued by top management.

In some companies, however, finance is line. In an Eastern manufacturing company, for instance, where about half of the company's business comes from products which are leased to customers and paid for on a usage basis, the accounting group within the finance department is directly concerned with a substantial portion of the company's income. Finance is therefore set up as a line operation with authority to make final decisions in the same manner as manufacturing and sales have the final word in their functions. Finance is a line function in the company I represent.

Research is line in some companies; staff in others. Again the reason for the difference can be found in the objectives of the company.

So much for the principles behind line and staff organization — now a few words about the use of assistants in the executive organization.

Use of the Management Assistant

We have participated in many studies of organizations and have found sharply differing views on the use of assistants.

Some executives feel that, if properly used, the assistant can take an important part on the management team. They can relieve the overworked manager of some of its burdens — thus freeing him for his primary, but often neglected, over-all responsibilities.

Other executives will tell you that this is mostly a rationalization. They feel that any manager who uses an assistant is simply admitting that he is not capable of delegating fully and effectively to his line subordinates. He is asking for a crutch, when what he should be doing is learning to become a better administrator.

Now, both these points are understandable. For a good many years overloaded executives have used assistants to help carry their responsibilities. In many cases this manager-assistant arrangement has worked

out satisfactorily. In other cases the relationship has given rise to new problems that have been sufficiently vexing as to cause many companies to take a pretty penetrating look at the use of assistants.

Let us take a look at why these problems arise.

1. One is that there are two distinct kinds of assistants — line and staff. Confusion arises because of misunderstanding of the *proper* roles of these two. The line assistant is second in command and is capable of taking over in the boss' absence. The staff assistant carries out certain responsibilies *for* his boss. He acts in the name of his principal but has no authority over subordinates in the chain of command.
2. Another reason for the difficulty with assistants is that a special relationship usually emerges between the assistant and his boss. Very early in the game the assistant, whether line or staff, finds that he must be able to subordinate his own preference to that of his principal. The point I am making here is that an assistant should derive his sense of importance and personal worth from the accomplishments of his boss, rather than his own.
   Assistants must have a great deal of flexibility. They often find that their duties are not clear cut and that they may change greatly from week-to-week or even day-to-day. They may find themselves uncertain of the nature of their jobs and constantly in danger of encroaching on the duties of others.
3. Finally, assistants often discover they can't work in the manner they prefer. More than any other position within the organizational framework, the line or staff assistant's position requires a person who can learn to blend with his boss. He needs to know his work habits, his personal idiosyncrasies and has to learn to adjust to them. It is not too surprising then that a great many assistants find this relationship both exacting and difficult.

The problems that arise can be caused on the boss' side, too. How? Well —

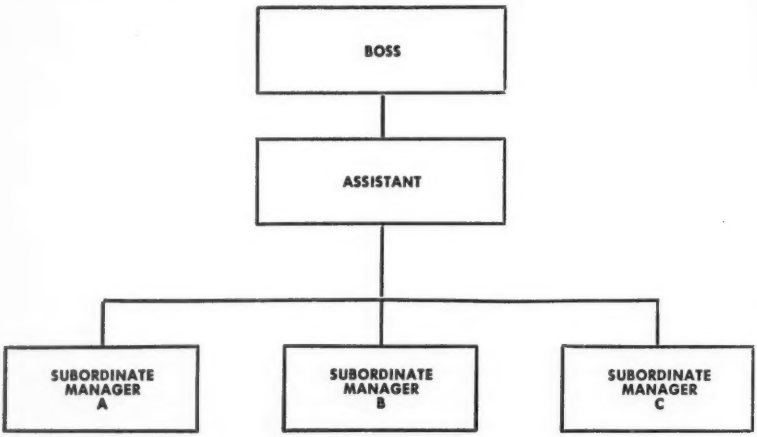
1. Because the Assistant is most readily available, the boss is tempted to delegate jobs to him that more properly belong in the province of subordinate managers. Crossing lines of authority for whatever reason always causes dissatisfaction and resentment.
2. Again, the executive may use his assistant as a tool in office politics or to further his own personal interest. If a manager has weaknesses in leadership and human relations, his immediate assistants are the ones who feel the first — and greatest — impact.

It is pretty obvious, then, that unless the boss, the assistant and the subordinate managers involved all *clearly* understand the details of the assistant's job and his proper place in the administrative set-up, as well

as the personnel and working inter-relationships of everyone concerned, the manager-assistant arrangement can and does create situations that range anywhere from ineffectiveness to absolute chaos.

I don't want to labour this phase of organization too much, but because it is of extreme importance and coming into more prominence in this area daily, I would like to spend a moment or two looking at a few ways the boss can get assistance and some of the advantages and disadvantages.

Where can the boss get assistance?



He can use a line assistant who:

1. Has secondary responsibility for managing the function.
2. Takes over in absence of boss.
3. Usually assists boss with the whole range of duties.

Advantages:

The line assistant takes over in the absence of boss or when boss is not available thus assuring more stability in the routine operation of the department.

Tends to improve discipline and in the long run aids morale because the line assistant is usually more available to subordinates and has more time to listen to complaints and grievances.

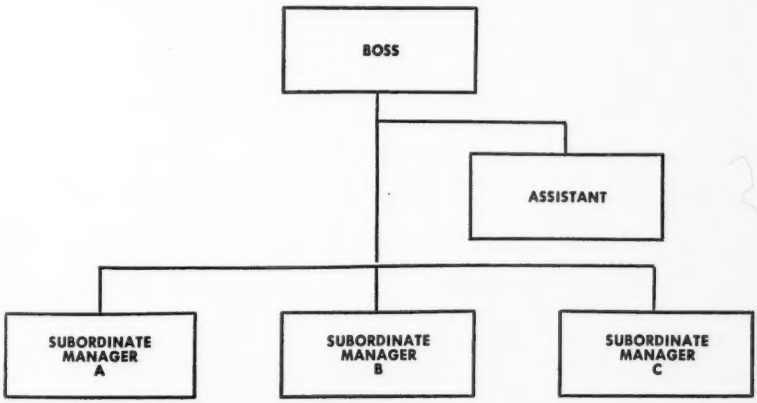
It also helps to develop men. If a manager is to be retired, promoted or transferred, it is an excellent idea to bring his replacement in as a line assistant, well in advance of the change. In this way the retiring boss can gradually turn over his duties and little disturbance of normal operation takes place when the change occurs.

Some of the Disadvantages

Frequently he is assigned duties that are far beneath his actual ability and scale of pay, such as handling routine matters that could be performed by a secretary or a clerk, or dealing with administrative details such as correspondence, planning meetings, writing speeches, which are well within the capacity of a staff assistant. This disadvantage, however, is poor use of line assistance and represents a waste of valuable talent.

A real disadvantage, however, in the one-over-one relationship is the fact that all subordinate managers report to the top man through the line assistant. There are two basic weaknesses here:

1. Everything goes through the assistant up and down and it is only natural for the assistant to give his personal slant to some of this information, which is often a real detriment to the boss in decision making.
2. The line assistant actually functions as a barrier. Communications are slowed down, because of this additional layer. Decisions are delayed. Even worse, the boss tends to lose personal touch with his subordinate managers.



He can get help from a staff assistant who:

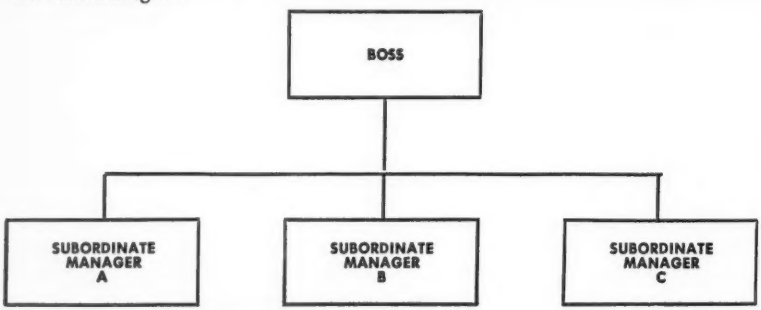
1. Acts as an extension of his boss.
2. Has no authority over subordinate managers.
3. Usually helps the boss with only specified responsibilities.

This is particularly good for training in that it is impossible to practice job rotation. A Staff Assistant may be given appropriate experience then moved on with very little disturbance. Can be given specific assignments aimed at overcoming personal deficiencies.

It has the disadvantages that:

1. Staff Assistants may be looked upon as a "Crown Prince". Many experienced managers feel there is a tendency for the Staff Assistant to develop an exaggerated sense of his own importance because of his position. Since he is privy to many of the major decisions that an executive makes, he may exercise an unwarranted influence on both subordinate line or staff managers. In many instances he is deferred to by the line managers because of his closeness to the boss.
2. Another danger is that the Staff Assistant may become thought of as a snooper or a spy because he is asked to check up on things or to report on work in progress. He may be encouraged by his superior to render opinions and judgment about other managers or executives. This, of course, can be both personally and administratively destructive.

The boss can also get assistance by this type of organization where he uses no assistants, as such, but delegates his responsibility entirely to his submanagers.



This type of organization:

1. Facilitates closest teamwork.
2. Simplifies co-ordination.
3. Is the best way to develop submanagers.

Considering all the pros and cons regarding assistants, differences in company practices are not surprising. Some companies have found they can get along without assistants of any kind. Others promote and encourage the appointment of assistants at every level. Between the two there are many variations in philosophy and practice.

Broadly speaking, however, some of the factors that should be considered before using assistants are:

1. "Has everything possible been delegated to subordinates?" Many managers, if they would write out a list of the responsibilities they would delegate to an assistant, would find upon

checking the position descriptions of their existing submanagers that a great many of the proposed responsibilities could be delegated to existing positions.

2. "What remaining responsibilities can't be delegated?" After analyzing his own job, a manager usually is able to determine what responsibilities he should exercise personally. The kind and extent of these will determine how much and what type of assistance he will need.
3. "How much administrative detail is the boss responsible for?" Does he set up frequent meetings? Does he have a great deal of important correspondence with outside agencies? Do problems, of a highly technical or specialized nature, frequently come up which demand immediate investigation and recommendations? If the boss can't delegate this type of detail to a secretary or submanager, it is quite possible he should give serious consideration to the use of a staff assistant.
4. "How much of the time is an executive absent?" If the answer to this one is any appreciable amount: Is he willing to permit his submanagers to take over during his absence? Are they capable? Negative answers to these questions are a strong indication of the need for line assistance.

The evidence indicates to me that assistants are needed much less frequently than commonly thought. However, if a manager does need an assistant through proper delegation he can develop a fully effective, loyal and productive working partner who will be of real assistance to him in helping him do his job properly.

So much for the concepts of management organization and now briefly a word about tools.

Management Tools

The first tool, of course, and the one that is spread before us like the great outdoors, is the Organization Chart. Many members of management seem to think that all their problems are settled once a chart is drawn showing who reports to whom, which jobs are line and which jobs are staff. However, I have never seen a chart which really told me anything.

Sure I can see that the company has a Chairman of the Board, a President, sundry Vice-Presidents and Department Heads, but I know these things without seeing a chart. It isn't that I have no use for an organization chart per se, the chart is a part of the organization picture but not too important a part. The best it can do is to provide a pattern for the time being. I want to emphasize that phrase "time being" because a chart is essentially static.

On the other hand, an organization is anything but static, for it is changing its pattern day by day, week by week, as well as year by year.

Therefore, charts have to be modified as often as organization changes require those modifications.

The second and most important tool in organization work and complementary to the Organization Chart is a Management Guide.

The Management Guide is a delineation of the functions, responsibilities, authorities and principal relationships of a particular position in a business organization, or a series of such positions, and should be used constantly as a detailed blueprint for management and supervisory positions at all levels.

The formal sources from which the members of management of a corporation derive their powers and duties are statutes, the articles of incorporation, the by-laws and the resolutions of the Board of Directors. These do not set forth in detail the duties and powers of members of management, nor are they designed to serve this purpose. Detailed functions, responsibilities, authorities and relationships are usually the result of usage and corporate practice which, in most instances, have not been reduced to formal writing. More often than not, detailed explanations exist only in the minds of members of management or in the body of tradition of the corporation.

A Management Guide provides a means through which usage, corporate practice, tradition and other requirements are formally set forth. The Management Guide is therefore supplementary to, rather than a part of, the by-laws, resolutions of the Board, basic policies and other sources of powers and duties.

It sets forth — after it has been determined that the functions are proper and well allocated — the objective, duties, authority and relationships of each member of each level of management. Thus each member of management is provided with a permanent source of clear understanding of his position in the organization, with instructions and guidance in the objectives and co-operative relationships for which he is responsible.

The duties of members of management are more general in nature and more difficult to define than are the more tangible duties of those who perform routine tasks. For example, in the modern concept of scientific management it is fairly easy to specify the machine, tools and operations with which a barrel cleaner is concerned in the performance of his job. These matters may be delineated in a relatively few words in a job description. In the case of a Sales Manager, however, the intangible responsibilities and the many different relationships which are of paramount importance in the fulfilment of the position cannot be stated comprehensively in the form of a job description.

Some means for recording the size and dimensions of management positions is necessary. Organization planning requires that the organization structure and the allocation of functions to specific positions be clear cut, not only to achieve the objectives of the enterprise, but (and

this is extremely important) to have a reference point from which to proceed in marking out other co-ordinate and subordinate positions.

It is in this respect that the Management Guide assumes its proper place in organization planning. The Guide serves to augment the general organization plan as embodied in the organization charts by recording for reference and use the functions or objectives of each management position, the breakdown of each function into its component parts (duties) and the important relationships involved in the accomplishment of the function. Having reduced to writing the management requirements of the enterprise, the organization planner is then in a position to proceed with the detailed planning of the components of the organization structure. The Guide serves the further purposes of indicating overlapping responsibilities, so that the situation may be altered or clarified as necessary and of highlighting matters requiring special attention and co-ordination.

Management itself derives many benefits from the use of Management Guides. In any situation in which a member of management is to any degree unsure of obligation or authority, reference to his Guide will ordinarily afford the answer. Similarly, the question of what channels to follow in obtaining approval of proposals or decisions on important matters can be determined with relative ease by consulting the Guide. Conflicts between individuals over jurisdiction are immediately disposed of by reference to a Management Guide. It serves as an open, official record of the entire scope of the responsibilities and authorities of management positions.

With a Management Guide in his possession the progressive member of management will be well advised more often than not to review those sections pertaining to his position and thus gain a broader knowledge and increased understanding of his place and the attendant obligations in the hierarchy of the enterprise.

It is of considerable value in the field of Executive Development, both to the employee who is being prepared for greater responsibility and to his immediate supervisor. It provides the occupant of a position with the necessary knowledge of his function, responsibilities, authority, relationships and indicates those matters in which he requires further training. A study by the candidate of the Guide itself will provide a certain amount of training.

The immediate supervisor will find the Guide useful, since it provides an objective or ideal against which can be measured the performance and progress of the subordinate employee. This reveals those segments of the position in which performance may be inadequate and provides a means of evaluating the individual, his potential and his further training. In the same manner it can assist in the selection of candidates for a vacant position wherein individual capabilities and potentialities may be compared with the requirements of the position.

Real use of the Management Guide leads to better understanding of the objectives of management, the duties for which each member is responsible, the means by which these objectives may be realized, the channels or relationships through which the functions may be fulfilled, in short — good executive organization.

Conclusion

However, one last word in closing.

You can't have good organization unless you follow some or all of the principles I have been talking about today, but don't lose sight of two very important factors. One that I mentioned earlier and that is that organizations are not static, they are alive and virile and changing and as such they must be reviewed from time to time and changed and brought up-to-date as the situation warrants. The second, and certainly not the least important, is the human relation aspects of organization. In all companies we are dealing with the greatest single asset that companies have and those assets are human beings — sometimes organizations have to be built around individuals, their capabilities, weaknesses, personalities, etc., etc. In other words, gentlemen, it is a matter of putting it down in writing — trying it, reviewing it, modifying it and trying it again.

FOR FURTHER READING

HOW TO REVISE ORGANIZATION CHARTS, by L. M. Slote, Management Methods, May 1955.

PROFITABLY USING THE GENERAL STAFF POSITION IN BUSINESS, by L. F. Urwick and E. Dale, A.M.A. General Management, Series No. 165.

SOME ASPECTS OF COMPANY ORGANIZATION AND REORGANIZATION, by H. P. Wright, Cost and Management, May 1951.

Student Section . . .

EXAMINATIONS 1955

ADVANCED COST ACCOUNTING—Paper 2

Comments by George Moller, D.Jur., C.A., R.I.A.

QUESTION V (18 marks)

Residential Housebuilding Limited is engaged in constructing 100 houses. The houses are expected to sell for an average of $12,000 including landscaping. This average is based upon the following estimates:

Cost of land	$ 100,000
Subcontract excavations	100,000
Services to project (roads, water main and lighting)	40,000
Materials	350,000
Labour	320,000

Subcontract trades—plumbing	50,000
heating	50,000
painting	30,000
wiring	30,000
landscaping	20,000
Overhead (based on experience)	59,950
Profit	50,050
	$1,200,000

At the end of the company's fiscal year, the situation is as follows:

(a) 70 houses had been sold, of which 50 had been completed and conveyed to the owners, and 20 are completed except for subtrades.
(b) On 10 of the 50 completed and conveyed, landscaping is only half completed.
(c) 30 houses have been excavated, and for 15 of these, 40% of the labour has been applied.
(d) All material for the project is on the site.
(e) All public services have been completed.

Overhead is to apply equally to all cost items.

The Trial Balance of the general ledger shows the following balances:

Land	$ 98,000
Excavation	102,000
Services to project	43,000
Purchases (material)	345,000
Labour	245,000
Plumbing	26,000
Heating	24,000
Painting	14,000
Wiring	16,000
Landscaping	8,000
Sales	830,000
Overhead Expense control a/c	46,000

REQUIRED:

(a) Journal entries to close books, charging the following work in process accounts at actual cost, and transferring the estimated cost of finished houses and of houses sold to the proper accounts.
  (i) Land, excavations and services
  (ii) Materials
  (iii) Labour
  (iv) Landscaping
  (v) Overhead

Adjusting entries necessary to record finished houses and houses sold, at actual cost.

Entries necessary to adjust the finished houses and cost of sales.

Re-determine the estimate of cost by elements on the basis of the actual cost of operations.

(b) Prepare profit and loss statement for the fiscal year.

SOLUTION TO QUESTION V

PRODUCTION STATUS

Completed and conveyed	40
Completed except for half of landscaping	10
Completed except for subtrades	20
Excavated with all material and 40% of labour	15
Excavated with all material on site— no labour	15
Units put into production	100

JOURNAL ENTRIES

W.I.P. Land and Excavations and Services		$ 243,000	
W.I.P. Material		345,000	
W.I.P. Labour		245,000	
W.I.P. Subtrades excluding landscaping	80,000		
W.I.P. Landscaping		8,000	
W.I.P. Overhead		46,000	
Vouchers Payable			$ 967,000
To record the costs incurred			
Houses finished and conveyed		460,000	
W.I.P. Land, Excavations and Services			96,000
W.I.P. Materials			140,000
W.I.P. Labour			128,000
W.I.P. Subtrades excluding landscaping			64,000
W.I.P. Landscaping			8,000
W.I.P. Overhead			24,000
To record the relief of W.I.P. at estimated cost for 40 houses finished and conveyed.			

BREAKDOWN OF WORK-IN-PROCESS ACCOUNTS

Elements	Units or Equiv.	Actual Inv. Balance	Inv. Balance at Estim.	Variation	Per Unit
Land, Excavations and Services	60	$147,000	$144,000	$(3,000)	$(50.00)
Material	60	205,000	210,000	5,000	83.33
Labour	36	117.000	115,200	(1,800)	(50.00)
Subtrades ex. Landscaping	10	16,000	16,000		
Landscaping	5		1,000	1,000	200.00
Overhead	..	22,000	26,740*	4,740	....

* 5% of $486,200.

JOURNAL ENTRIES

Adjustment Account	$ 3,000	
W.I.P. Land, Excavations and Services		$ 3,000
W.I.P. Material	5,000	
Adjustment Account		5,000
Adjustment Account	1,800	
W.I.P. Labour		1,800
W.I.P. Landscaping	1,000	
Adjustment Account		1,000
W.I.P. Overhead	4,740	
Adjustment Account		4,740
To record the adjustment of W.I.P. Accounts to the estimated cost figures.		
W.I.P. Land, Excavations and Services	1,800	
Finished houses	1,200	
Adjustment Account		3,000

To prorate the adjustment over 40 finished houses and 60 W.I.P.		
Adjustment Account	5,000	
W.I.P. Material		3,000
Finished houses		2,000
To prorate the adjustment over 40 finished houses and 60 W.I.P.		
W.I.P. Labour	853	
Finished Houses	947	
Adjustment Account		1,800
To prorate the adjustment over 40 finished houses and 36 equivalent W.I.P.		
Adjustment Account	1,000	
W.I.P. Landscaping		111
Finished Houses		889
To prorate the adjustment over 40 finished houses and 5 equivalent W.I.P.		
Adjustment Account	4,740	
W.I.P. Overhead		2,435
Finished Houses		2,305
To prorate the adjustment over finished houses and W.I.P.*		

*Calculation of overhead proration:

Value of finished goods including adjustments for all but overhead	$ 459,258	
Value of W.I.P. including adjustments for all but overhead	485,742	
Therefore the adjustment of $4,730 is to be prorated in the ratio of 459 to 486.		
W.I.P.		$ 2,435
Finished Houses		2,305

NEW ESTIMATED COST ELEMENTS ON THE BASIS OF THE ACTUAL COST OF OPERATION

Element	Original Estimate	Variance	New Estimate
Land	$ 1,000	$ (20)	$ 980
Excavations	1,000	20	1,020
Services	400	30	430
Materials	3,500	(50)	3,450
Labour	3,200	24	3,225
Subcontract Trades			
Plumbing	500	....	500
Heating	500	....	500
Painting	300	....	300
Wiring	300	....	300
Landscaping	200	(22)	178
Overhead (5½% of costs)..	600	(5%)	542
	$11,500		$11,424

Therefore 100 units would cost $1,142,600.

RESIDENTIAL HOUSEBUILDING LTD.
PROFIT AND LOSS STATEMENT
FOR THE YEAR ENDING .....

Sales—at actual costs 70 units @ $11,857.14		$ 830,000	
Less not conveyed 20		237,143	
50			$ 592,857
Cost of Sales			
Land	$ 98,000		
Excavation	102,000		
Services	43,000		
Purchases	345,000		
Labour	245,000		

Plumbing	26,000			
Heating	24,000			
Painting	14,000			
Wiring	16,000			
Landscaping	8,000			
Overhead	46,000			
		967,000		
Less W/P on hand				
50 Land	$ 49,000			
50 Excavation	61,000			
50 Services	21,500			
50 Material	172,500			
26 Labour	83,816			
	$ 387,816			
Overhead	24,305	412,121	554,879	
				37,978
Less landscaping to be completed at estimated cost in excess of actual			1,000	
Overhead			55	1,055
PROFIT				$ 36,923

COMMENT TO QUESTION V

This was the most controversial question of the whole examination.

Some criticism was levelled at the fact that the problem was chosen from the home building industry which may be unfamiliar to a substantial number of candidates. It should be realized that a cost accountant, if and when fully qualified, should be able to realize the essentials of any problem regardless of the background he is faced with.

It should have been clear to any candidate that the problem was essentially an estimated cost problem. There were units involved, in this case houses, but if the candidate would have substituted in his mind the word "unit" for the word "house," he could have found it immediately familiar and solvable by standard text book approach to estimated cost accounting problems.

Many candidates stumbled over the fact that the builder sold houses which he hadn't yet completed. It is quite usual that manufacturers sell a product which they have not yet produced and receive down payments or advanced payments for these sales.

The candidate could earn marks by merely correctly realizing that he was dealing with an estimated cost problem and devise the proper journal entry for this. He could further earn marks by arriving at a revised estimate even if the figures weren't correct. Again, the mere devising of the proper form for the revised costs was sufficient to earn marks. A number of candidates earned more than 60% of the available marks on this problem. Two students received 17 marks out of the 18 available. It should be mentioned that the candidate could have started with 40, 50 or 70 units and still arrive at a full mark solution.